

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Cancel claims 30, 44 and 57.

1. (Currently Amended) A method for providing authentication in a connection establishment process of a transmission control protocol, wherein a first processor attempts to establish a communication over a network, the method executing in a second processor, the method comprising  
creating an authentication session item request in a first portion of transmission control protocol data, wherein the authentication session item request ~~indicates a request~~ is used to start an authentication session; and  
sending the first portion of transmission control protocol data to the first processor during the connection establishment process.
2. (Original) The method of claim 1, wherein the transmission control protocol includes standard TCP.
3. (Original) The method of claim 2, wherein the first portion of transmission control protocol data includes a request to establish a standard TCP connection.
4. (Original) The method of claim 3 wherein the first portion of transmission protocol data includes a segment used in a three-way handshake.
5. (Currently Amended) The method of claim 2, wherein the authentication session ~~request~~ item includes ~~setting~~ a value in a TCP segment header.

6. (Original) The method of claim 5, wherein a first value is set for data from the second processor to the first processor, and where a second value is set for data from the first processor to the second processor.

7. (Currently Amended) The method of claim 2, wherein the authentication session ~~request~~ item includes ~~creating~~ a TCP option.

8. (Original) The method of claim 7, wherein the option includes an octet.

9. (Original) The method of claim 1, wherein the authentication session includes an Extensible Authentication Protocol (EAP) session.

10. (Original) The method of claim 1, further comprising  
receiving a response from the first processor in response to sending the first portion of transmission control protocol data;  
determining whether the response from the first processor indicates that the first processor will comply with the authentication session; and  
if the first processor will not comply with the authentication session then performing a substep of  
restricting access of the first processor.

11. (Original) The method of claim 1, wherein the first processor includes a client process and wherein the second processor includes a server process.

12. (Original) The method of claim 1, wherein the second processor intercepts a transmission from the first processor.

13. (Currently Amended) A method for initiating an authentication session between first and second processes, the method comprising

encapsulating an authentication session ~~request item~~ within a TCP session request, wherein the authentication session item is used to start an authentication session; and sending the authentication session request during connection establishment.

14. (Original) The method of claim 13, wherein the step of encapsulating includes a substep of  
including an authentication session request in a transfer of data indicating a TCP session handshake.

15. (Currently Amended) The method of claim 14, wherein the authentication session ~~request item~~ includes ~~setting~~ a value in a TCP segment header.

16. (Original) The method of claim 15, wherein a first value is set for data from the second process to the first process, and where a second value is set for data from the first process to the second process.

17. (Currently Amended) The method of claim 14, wherein the authentication session ~~request item~~ includes ~~creating~~ a TCP option.

18. (Original) The method of claim 17, wherein the TCP option includes an octet.

19. (Original) The method of claim 13, wherein an authentication session entered as a result of using the authentication session ~~request item~~ includes an Extensible Authentication Protocol (EAP) session.

20. (Currently Amended) An apparatus for providing authentication in a connection establishment process of a transmission control protocol, wherein a first processor attempts to establish a communication over a network, the apparatus comprising:

an authentication session requestor for creating an authentication session ~~request~~  
item in a first portion of transmission control protocol data, wherein the authentication session  
~~request~~ item is used ~~indicates a request~~ to start an authentication session; and  
a transmitter for sending the first portion of transmission control protocol data to  
the first processor during the connection establishment process.

21. (Original) The apparatus of claim 20, wherein the transmission control protocol includes standard TCP.

22. (Original) The apparatus of claim 21, wherein the first portion of transmission control protocol data includes a request to establish a standard TCP connection.

23. (Original) The apparatus of claim 22 wherein the first portion of transmission protocol data includes a segment used in a three-way handshake.

24. (Currently Amended) The apparatus of claim 21, wherein the authentication session ~~request~~ item includes ~~setting~~ a value in a TCP segment header.

25. (Original) The apparatus of claim 24, wherein a first value is set for data from the second processor to the first processor, and where a second value is set for data from the first processor to the second processor.

26. (Currently Amended) The apparatus of claim 21, wherein the authentication session ~~request~~ item includes ~~creating~~ a TCP option.

27. (Original) The apparatus of claim 26, wherein the option includes an octet.

28. (Original) The apparatus of claim 20, wherein the authentication session includes an Extensible Authentication Protocol (EAP) session.

29. (Currently Amended) A computer-readable storage medium including instructions for providing authentication in a connection establishment process of a transmission control protocol, wherein a first processor attempts to establish a communication over a network, the computer-readable storage medium comprising:

one or more instructions for creating an authentication session ~~request~~ item in a first portion of transmission control protocol data, wherein the authentication session ~~request~~ item is used ~~indicates a request~~ to start an authentication session; and

one or more instructions for sending the first portion of transmission control protocol data to the first processor during the connection establishment process.

30. (Canceled)

31. (Currently Amended) A method for initiating an authentication session in a connection establishment process of a transmission control protocol, wherein a first processor attempts to establish a communication with a second processor over a network, the method executing in the first processor, the method comprising

sending a request to establish a transmission session;

receiving an authentication session request during the connection establishment process ~~a negotiation of establishment of the transmission session~~; and

conducting authentication session communications during the connection establishment process.

32. (Original) The method of claim 31, wherein the step of sending a request includes a substep of

sending a standard transmission control protocol (TCP) request.

33. (Original) The method of claim 31, wherein the step of receiving an authentication session request includes a substep of

receiving the authentication session request in a first portion of transmission control protocol data.

34. (Original) The method of claim 32, wherein a first portion of transmission control protocol data includes a request to establish a standard TCP connection.

35. (Original) The method of claim 34 wherein the first portion of transmission protocol data includes a segment used in a three-way handshake.

36. (Original) The method of claim 34, wherein the authentication session request includes setting a value in a TCP segment header.

37. (Original) The method of claim 36, wherein a first value is set for data from the second processor to the first processor, and wherein a second value is set for data from the first processor to the second processor.

38. (Currently Amended) An apparatus for initiating an authentication session in a connection establishment process of a transmission control protocol, the apparatus comprising:  
one or more processors;  
a network interface;  
a computer-readable storage medium on which is stored instructions for causing the one or more processors to perform a method comprising:  
sending a request to establish a transmission session;  
receiving an authentication session request during the connection establishment process ~~a negotiation of establishment of the transmission session~~; and  
conducting authentication session communications during the connection establishment process.

39. (Original) The apparatus of claim 38, wherein standard transmission control protocol (TCP) requests are issued.

40. (Original) The apparatus of claim 39 wherein a first portion of a standard transmission control protocol request includes a segment used in a three-way handshake.

41. (Original) The apparatus of claim 39, wherein an authentication session request includes setting a value in a TCP segment header.

42. (Original) The apparatus of claim 39, wherein a first value is set for a first type of communication session and wherein a second value is set for a second type of communication session.

43. (Currently Amended) A computer-readable storage medium including instructions for initiating an authentication session in a connection establishment process of a transmission control protocol, wherein a first processor attempts to establish a communication with a second processor over a network, the instructions executed by the first processor, the computer-readable storage medium comprising:

one or more instructions for sending a request to establish a transmission session;

one or more instructions for receiving an authentication session request during the connection establishment process ~~a negotiation of establishment of the transmission session~~; and

one or more instructions for conducting authentication session communications during the connection establishment process.

44. (Canceled)

45. (Currently Amended) A method for initiating an authentication session in a connection establishment process of a transmission control protocol between first and second processors communicating via a network, the method comprising

requesting, with the first processor, to establish a transmission session;

creating, with the second processor, an authentication session request in a first portion of transmission control protocol data, wherein the authentication session request indicates a request to start an authentication session;

sending the first portion of transmission control protocol data from the second processor to the first processor;

receiving an authentication session request during the connection establishment process ~~a negotiation of establishment of the transmission session~~; and

conducting authentication session communications during the connection establishment process.

46. (Original) The method of claim 45, wherein the step of sending a request includes a substep of

sending a standard transmission control protocol (TCP) request.

47. (Original) The method of claim 46, wherein the first portion of transmission control protocol data includes a request to establish a standard TCP connection.

48. (Original) The method of claim 47 wherein the first portion of transmission protocol data includes a segment used in a three-way handshake.

49. (Original) The method of claim 47, wherein the authentication session request includes setting a value in a TCP segment header.

50. (Original) The method of claim 45, wherein a first value is set in the first portion of transmission control protocol data for data sent from the second processor to the first



processor, and wherein a second value is set in the first portion of transmission control protocol data for data from the first processor to the second processor.

51. (Currently Amended) An apparatus for initiating an authentication session in a connection establishment process of a transmission control protocol, the apparatus comprising:  
a client processor;  
a server processor;  
a computer-readable storage medium on which is stored instructions for causing the one or more processors to perform a method comprising:  
requesting, with the client processor, to establish a transmission session;  
creating, with the server processor, an authentication session request item in a first portion of transmission control protocol data, wherein the authentication session ~~request~~ item indicates a request is used to start an authentication session;  
sending the first portion of transmission control protocol data from the server processor to the client processor, during the connection establishment process;  
receiving the first portion of transmission control protocol data at the client processor; and  
conducting authentication session communications.

52. (Original) The apparatus of claim 51, wherein standard transmission control protocol (TCP) requests are issued.

53. (Original) The apparatus of claim 51 wherein the first portion of a standard transmission control protocol request includes a segment used in a three-way handshake.

54. (Original) The method of claim 51, wherein an authentication session request includes setting a value in a TCP segment header.

55. (Original) The method of claim 51, wherein a first value is set for a first type of communication session and wherein a second value is set for a second type of communication session.

56. (Currently Amended) A computer-readable storage medium including instructions for initiating an authentication session in a connection establishment process of a transmission control protocol, wherein a first processor attempts to establish a communication with a second processor over a network, the instructions executed by the first processor, the computer-readable storage medium comprising

one or more instructions for requesting, with the first processor, to establish a transmission session;

one or more instructions for creating, with the second processor, an authentication session ~~request~~ item in a first portion of transmission control protocol data, wherein the authentication session item ~~request indicates a request~~ is used to start an authentication session;

one or more instructions for sending the first portion of transmission control protocol data from the second processor to the first processor, during the connection establishment process;

one or more instructions for receiving the first portion of transmission control protocol data at the first processor; and

one or more instructions for conducting authentication session communications.

57. (Canceled)